AN OVERVIEW AND COMMENTARY ON THE WORKSHOP,
HUMAN BEHAVIOUR IN DISASTER

J OLIVER

Honorary Research Consultant, Department of Geography,
University of Queensland

Formerly Deputy Chairman, Centre for Disaster Studies,
James Cook University

Introduction

Although people are a necessary element in disaster, it is
surprising, as was indicated by Brigadier Gilmore, Director of
the Australian Counter Disaster College, that there has been a
neglect of unified and co-ordinated research into human
behaviour in disaster. Whereas a significant body of knowledge
and understanding of the agents of disaster and of the appro-
priate engineering or technological measures to mitigate their
impact has been established, the explanation of the ways in which
people interact with disaster stress is much more tentative.
This situation arises from the complexity of the interaction
rather than from a disinclination to analyse it.

The basis of counter-disaster activities, the training of
personnel to assist disaster-affected communities, the improve-
ment of the perception of the disaster threat, the encouragement
of self-help in times of extreme environmental stress and the
mitigation or elimination of the stresses, these and many other
aspects of counter-disaster management require a clear under-
standing of the nature of human response.

The workshop, jointly sponsored by the Department of Defence
(Natural Disasters Organisation) and the Department of Psycho-
logy of La Trobe University, represents a milestone in the study
in Australia of human behaviour in disaster. While in aggregate
there is a considerable amount of individual research on this
topic, the workshop is the first occasion since 1976 in which it
has been the specific focus of attention of a group of
contributors.

In the final session of the workshop, discussions centred upon
ways by which future research could concentrate on the most
essential areas of enquiry. This, of course, necessitated the
identification of the main gaps or inadequacies in the existing
knowledge and a determination of the directions which future
research could most valuably follow. Indicative of the current
state of knowledge the resulting discussion revealed a range of
divergent opinions on how the papers presented in the workshop
could be welded into a form which could provide the foundation
for research and a contribution to disaster management and the
training of counterdisaster personnel. Time ran out before the
discussion could be completed and it was proposed that an over-
view of the workshop should be attempted with these aims in
mind.

This paper is an individual assessment by someone who might be described as a social scientist but who is not a professional psychologist, psychiatrist or sociologist. It seeks to examine the outcomes to the workshop that can usefully answer the questions, "How do we (practitioners and trainers) most effectively identify and deal with the behavioural problems caused by disaster?" "What issues arising in the workshop will aid the counter-disaster planner?" An element of translation in involved. As Clayer and Bookless-Pratz remarked, "A number of problems exist in transforming the research that has been conducted into the psychological impact of disasters into the practical provision of mental health services". The disaster manager or trainer has neither the time, nor always the background, to disentangle the matters under debate and to reach decisions on what should be incorporated into actual counter--disaster operations. The material presented here reflects the bias explicit in the above comments and may not always harmonise with some of the more specifically academic or scientific inclinations of the workshop participants.

Professor Beverley Raphael, examining the rationale for research into human response, identified three areas of interest: (i) counter disaster management, (ii) dealing with problems of disaster morbidity and (iii) the establishment of a stress/ stimulus model based on the actual circumstances caused by disaster. The third of these can exist independently as a field of fundamental research or can be used to reach a better working understanding of the first two.

The Field of Concern

A number of definitions of disaster have been advanced. Several of the authors of papers touch on this important question (for example Britton, Chamberlain and Leivesley, and Michaelis).

Most, if not all, definitions are vague or ambiguous to a degree, involving unquantified or qualitative statements. The problem is exacerbated by the use of like terms such as catastrophe, emergency, accident or a general term such as environmental stress. Many of the authors interpreted disaster in different ways from each other. This divergence relates to the scale of event, scale of impact, frequency of occurrence, area affected, suddenness of onset, type of impact, (material disruption, death and injury, economic, psycho-social), characteristics of the impacted community (social systems, technological sophistication, resource base). There are considerable differences between urban and rural societies and economies, or between Third World and post-industrial countries. In addition to the distinction between natural and man-made disasters, there are many different individual types of disaster under each of these headings. The pattern of disaster onset varies from a gradual "creeping" type such as drought to events of great suddenness such as bushfire. Some disasters are predictable, and it is certain that they will occur at some time in the future. Others are possible but not certain. Not all disasters produce the same amount of stress (Cook, Wallace and McFarlane).

Response to Disaster

Attempts to understand the problems and needs of disaster-affected communities have concentrated until recently upon the victims from the general public. It is now recognised that the stress and welfare of disaster workers in the field demands attention. As yet the impact of the abnormal conditions of disaster on those who are in some way involved with planning, directing or evaluating counter-disaster operations receives little recognition. Even researchers in the field are not free from stress.

Professor Singh raised the important issue of ethics in research. He examined the principles of the least harm to the respondent, the need for informed consent and confidentiality. Research should be objective. Its justification should be the improvement in the understanding of the matter under enquiry, but it should neither cause undue stress to the individual nor fail to maintain strict confidentiality. This should be the sole motivation but other motives creep in. There may be an additional desire to help the stricken community, to take advantage of what is a natural research laboratory, to find exhilaration from the experience or even to seek some form of personal advancement.

Those who are being investigated are already likely to be suffering some form of stress and do not welcome being asked to recall past trauma or undergo interviews or complex questionnaires. In this context the desirability and suitability of long questionnaires is debatable. Those exposed to these sorts of enquiry find it difficult in the stresses of the time not to group together the do-gooder, the voyeur, the researcher and the offical inspector. Researchers can become part of the disaster impact and add to the stress. Commonly the counter-disaster officials and worker, with other matters on their minds, see the researcher as an impediment
and a nuisance.

Research Problems

The preceding comments have sought to demonstrate the problems of data collection. There are additional methodological problems.

A disaster situation is highly dynamic. Ideally research should begin from the moment the disaster is identified (were it possible, of course, one would like to anticipate the disaster and start still earlier). Quickly, as time passes, evidence is lost, behavioural patterns cannot be observed directly and have to be reconstructed, ideas or beliefs change or are concealed. In the presented papers, where interviews or questionnaires were involved, the first enquiry in a sequence often took place weeks or months after the event. While in some cases this was dictated by the research design, in others valuable time seems to have been lost. Funding delays or unavailability of personnel because of other commitments can often prevent a rapid start.

It has been, and to a large extent still is, a feature of
counter-disaster activity to concentrate on the few days
following the emergency, and then to hand over the problems and
the disaster affected community to the normal community services,
such as welfare, couselling, psychiatric and health services. It
has become increasingly apparent that those at risk in physical
and, even more, in psychiatric terms suffer for months, perhaps
years, after the event. Post-disaster stress disorders are not
necessarily resolved by the passage of time (McFarlane and Croft).
If they are untreated, long lasting mental or personality harm
may occur. The volunteer mental health team that worked in
Victoria (Macedon) after the bushfires were still displaying
psychological effects 11 months after the fire (Berah et al).
However it was observed that of the 2000 initial contacts with
South Australian Community Welfare Services after the fires only
50 were on the books in midAugust. Clayer and Bookless-Pratz
consider that a large proportion of psychiatric morbidity is
resolved within a year of disaster. It is nevertheless clear
that human behaviour must be considered in a longitudinal time
sense, even though the percentage of the overall affected
community experiencing more persistent effects is small. It is
difficult to obtain funding or uncommitted personnel for this
longer research.

In many of the papers presenting the outcome of specific studies
a proviso is made that the results are tentative and preliminary,
and that it is premature to make generalisations. The caution is
understandable, but from the viewpoint of those wanting to apply
up-dated knowledge the situation is frustrating. The samples in
the questionnaire or interview surveys are small. Research on
specific disasters rarely permits the establishment of a perfect,
statistically random sample. Hence there are risks of
unrepresentativeness or distortion. The scale of the investi-
gation and the time available often make it difficult to under-
take an appropriate control survey for comparison.

Evaluation techniques applicable to data on human behaviour are
often difficult to apply. The very fact that data must be
collected in the field introduces a new dimension into the
situation. Apart from the fact that interviews may be harmful
there is always the problem that respondents may seek to please
with 'socially desirable responses' (Singh refers to 'attribution
theory'). The respondents' own perceptions colour their response
and situations may well be rationalised as time elapses after the
disaster. Systematic forms of questionnaire analysis, such as
various symptom scales, the General Health Questionnaire or
Impact of Events Scale, assist the cross-comparison and standard-
isation of data. Professor Budd suggested that classical
epidemiological methods, (medical ecology), have great merit.
On the other hand these various approaches may be constraining,
and for particular enquiries special diagnostic criteria may be
better, though the findings may be difficult to equate with other
studies and general conclusions are less easily reached. It is
difficult to assess whether the results of individual case

studies, though providing valuable information, are unqiue to a given set of circumstances
or can permit widely applicable general conclusions. Anecdotal and descriptive statements are much less readily assessed than quantitative data.

The question of the correct techniques of statistical analysis is important, but was not pursued as a major theme at the workshop. Some of the studies had used correlation coefficients, multiple regression and principal components analysis. Reliable hypothesis testing is another aspect that merits attention.

Disaster Myths

The general community, and indeed many counter-disaster personnel, hold popular beliefs, which researchers consider at variance with the truth (see Blong's reference to Quarantelli and Dynes, 1972) such as panic, looting, anti-social behaviour, inability to think or plan after disaster.

Only through careful objective surveys of different disaster impacts
can correct judgments be reached. There is a danger when researching human behaviour, though this criticism in not directed at any of the workshop participants, that preconceived beliefs are perpetuated by enquiries which assume that conclusions that agree with earlier work are necessarily validated. Provided objectivity can be maintained, a growing weight of common findings increases the confidence in generalisations based upon them. However the possibility that all researchers started from the wrong premises cannot be automatically dismissed.

The Format of the Workshop

The opportunity to exchange the results of research undertaken on the 1983 Ash Wednesday bushfires was the initial stimulus for the workshop. Further planning broadened this aim to incorporate other, wider aspects of human behaviour in disaster.

Several broad issues provided the framework for grouping the presentations. An examination of fundamental issues in behavioural research related to disasters provided an introduction for the reports on the Ash Wednesday fires research which looked at their impact and the provision of welfare and other support services. Following these specific discussions some broader aspects of the organisational structure of the counter-disaster set-up and welfare delivery in Australia were examined. The section with papers on case studies of disasters provided comparative material from stress or disaster situations other than bushfires. Examining helpers and workers in disasters, particular emphasis was placed by several participants on the nature and significance of the effects of stress on this group. One paper in the section on broad issues in disaster response analysed more widely the underlying influences of major

disruptions upon human response. Others looked at broad aspects of the public awareness of disasters and at the organisational structure of Australian counter-disaster organisations. The address at the workshop dinner placed the subject into an international perspective, and in particular highlighted the importance of supporting in a positive way the inter-disciplinary character of disaster research. (Michaelis, 1984).

Review of Workshop Proceedings

This section attempts a general overview of the ideas and material presented in the workshop. It is not intended to cover comprehensively all the discussions but rather to seek to identify areas of widespread agreement, where divergent views prevailed, or where significant gaps in understanding still remained.

i.   The impact of disaster

Allowing for some differences in the interpretation of disaster, a range of effects upon both the individual and the group, material, economic, psycho-social and medical, were identified. Some studies focused upon specific groups, but it was recognised that a rigid distinction between victim and helper, especially where the latter came from the affected community, was unrealistic. The significant point was that for all those directly or indirectly affected, disaster caused disruptions which differed from normal day-to-day experiences. The impact was very apparent amongst those who had specific and stressful duties in or after the emergency, such as fire-fighters, mental health teams and counsellors, insurance assessors etc. "A small but significant minority of disaster relief workers can suffer significant psychological morbidity as the result of their experience" (McFarlane and Croft). The view was also expressed that psychiatric disorders were a function of individual vulnerability rather than of the environment (McFarlane).

With varying emphasis there was considerable agreement about the nature of the reactions, amongst which were mentioned denial, apathy, complacency, undue confidence in relief workers, frustration, anger, helplessness, anxiety, depression, numbness, loss of self-respect, feelings of guilt, intrusive thoughts and recurrent memories of the event, fantasising, loss of confidence in ability to weather a future disaster, social upheaval, family tensions. How far, if any, a distinction exists between non-disaster and disaster stress, except that the scale and spread of effects of the latter are greater, was not determined. "Is it possible to establish a generic grouping of human responses applicable to all disasters or are response patterns a function of disaster type and community characteristics?" Assuming the latter alternative implies that training or support systems should be flexible and adjustable to each particular set of circumstances. Two general groups of respondents were distinguished: 1. those who were passive and felt that external factors controlled their fate, 2. those able to call on

internal resources to control their own lives and meet directly
most environmental challenges. The former group tend to be more
susceptible to stress. An important area for study is the
identification of coping problems and the basis for improving
coping capacities. It is a challenging task and, of course,
extends beyond purely disaster response.

The belief was expressed that disaster-affected communities had
a higher coping capacity than many people, including relief
workers and the organisers of support systems, were inclined to
accept (Kearney and Britton). The question of the predictability
of the consequences of disaster, particular with respect to
psychiatric disorder or physical health, was considered though
the emphasis and conclusions varied. Either on a short- or
long-term basis the vulnerability of victims or helpers showed
individual variations,. If a sufficiently reliable prediction of
vulnerability were readily available prior to disaster, it would
help to determine the selection criteria to be used in vetting
trainees for counter-disaster or relief operations.

Predictability depends on the identification of the high risk
groups. A range of potentially relevant factors has been
canvassed including age, sex, ethnic group, genetic suscepti-
bility, cultural background, family structure and work pattern.
Higher risk groups included children between 8 and 12 years old,
especially from unstable homes, older people, those with a prior
history of medical or emotional illness. Some claimed that
females were more susceptible than males. The underprivileged
have also been identified by some as a high risk group, but it
seemed that social class was not a valid indicator. A reliable
guide to those most likely to need help would be invaluable, but
at this stage their identity is rather elusive.

It was suggested that the Ash Wednesday events indicated that
general medical practitioners and social workers showed a low
level of detection of post-disaster stress disorders (McFarlane;
Innes and Clarke). This led to the conclusion that there was
need for a professional input and the establishment of planned
psychiatric services within the counter-disaster organisations
so as to permit early detection and treatment.

ii.   Planning counter-disaster activities

An essential part of effective response is a pre-planned
organisation able to operate smoothly and promptly, however
infrequently or irregularly it may be called on. It was
suggested that in Australia there were a number of limitations in
the present structure of counter-disaster response at different
levels. A conceptual framework made up of cardinal, controlled,
conditional and constrained elements in the response network was
presented and its weaknesses analysed (Britton). Up to now
little attention has been devoted to the over-all evaluation of
the existing organisation and the roles of personnel within it.

It is unfortunately the case that similar response problems recur in different disasters, which suggests that more attention is required in the pre-disaster stage to the philosophies of the organisation and appropriate patterns of action, so that the most effective structure for the mitigation of disasters and the provision of help can be established.

In a more specific context, it was claimed that little attention is being devoted in Australia "to the ongoing development of a policy for the social welfare services" (Chamberlain and Leivesley). McFarlane and Frost pursued a similar point, "A review of the literature field failed to find any systematic audit of disaster welfare services that allowed the drawing of objective conclusions". Assessments had to rely mainly on anecdotal accounts.

A number of aspects of human behaviour in the pre-emergency and post-disaster phases received attention. Some of the main questions are considered below.

a.   The matters that concerned disaster-affected communities or individuals included loss of life and injury, loss of relatives, loss of property and possessions, fears of looting, evacuation and restrictions on early return to homes, financial needs. The community includes the relief workers and their identified areas of concern and need. The planning of relief organisations and training schedules requires reliable information on community priorities. These must be derived from a study of the communities themselves. It is dangerous to make blanket decisions about the needs of victims. There is still further research to be undertaken before an authoritative guide to the needs of disaster-impacted communities can be drawn up. An inventory is needed of stress situations. Identification of their effect, and agreement on ways to minimise or eliminate these effects and to strengthen the coping mechanisms of the individual and of the society are also required.

b.   "What emphasis should be placed on community awareness?" Some researchers felt that the general public displays a poor capacity to learn from experience. A well informed community (or relief worker) should be able to deal better with the problems of disaster. It is important to know the nature of the potential hazards and their probable effects. The receptivity of advice from the police, emergency service personnel, relief workers or counsellors is facilitated if the situation is under-stood. Those who aim to help the community must be able to decide whether their advice should be given in an authoritative or persuasive manner. The question of self-help requires information and understanding.

c.   The information base is important at all stages from planning for through to management of a disaster. It was indicated in the workshop that there was often a deficiency of information for the relief workers in the field or for the branches of the counter disaster organisation. Interim audits

with field workers during the post-disaster phase serve a double purpose. The workers themselves understand the position better and better documentation of the disaster is possible. It is also important that, so far as circumstances permit, careful records should be maintained by relief workers in the field. Data collection however usually takes a second place to the provision of relief. Valuable information can be derived from post-disaster impact surveys, especially if they are extended longitudinally over a sufficient time. More attention is needed to evaluate the operation and achievements of the counter-disaster services once the disaster is over. The media are a major source of information but the material collected reflects their judgment of what is of interest. There is also benefit to be gained from the information feedback from exercises (which should be held more frequently) designed to test the effectiveness of disaster plans.

d.   Support to a disaster-impacted community can take a variety of forms - material or tangible help, social and emotional support, information. Its value and character will reflect the characteristics and needs of the involved community. A thorough appreciation of the nature of psychological reactions to disaster is a prerequisite to the delivery of relief. Different sorts of disaster stress will require different forms of help. It is necessary to examine the organisation of support and the means of providing it. The outcome of such studies must then be the basis for the education and training of those who have to provide the support. Support systems need constant re-evaluation since needs themselves change.

At a time when the daily routine is in a state of upheaval those in need of material help or counselling must be protected from too complex a relief system. The operation of the Bushfire Relief Team in South Australia (Grear) demonstrated an encouraging awareness of this. Relief agencies located at a variety places, acting in isolation from each other, with limited periods of operation, can prove frustrating to those seeking assistance. If a single centre (or a limited number) at which all the required help is obtainable were set up this in itself would help to reduce stress.

e.   The value of self-help was emphasized at the workshop which recognised the merits of the 'therapeutic community'. Conversely there is a danger that help imposed from outside, especially if from outside the disaster area, may be counter-productive. The view was expressed that only the disrupted community can re-establish itself (Kearney and Britton), while it was also stated that to be effective relief operations need the sanction of the community (Buckingham and Grigor). External help should be viewed as a resource to be drawn on by the community when required. These remarks imply that the community can make the necessary judgments, but Blong's findings suggested a poor level of understanding of behavioural response in disaster by the general public. Some victims welcome the support systems

provided from external sources, while others prefer to call for help from those they would normally resort to. The family is often a valuable support unit. The help required may be just an opportunity to talk about the disaster experience. This and other help may be derived best from within the community from those known to and respected by the victims. In the case of the fire-fighters suffering from stress, emotional support from their co-workers was often the most valuable (Innes and Clarke). These attitudes, and the possibility of emergent self-help groups, should be taken into account in planning disaster relief. However, in specialised areas, such as mental health, skilled professionals may need to go out early into the community and not wait for people to come to them (Berah et al). There still remains a debate concerning the relative merits of self-help and imposed help.

f.   The importance of debriefing those involved in relief delivery was emphasized both for information and as an aid to minimising the psychological stress of the relief tasks. A significant point was made by Innes and Clarke, "The implications for 'debriefing' procedures after an emergency, or for the training of coping devices, are very different if we have to aim to change the social forces within a group, as against changing the behaviour patterns of the individuals within the group".

g.   Interagency and interpersonal conflicts too often characterise disaster relief operations (for example the experiences of the Mental Health Team in the Macedon area, Berah et al). Careful pre-planning and job specification may help to remove some of the potential causes of friction. Job specification can also help to ensure more uniform procedures between one relief worker and another. In addition 'scapegoating', as an excuse for non-performance or incorrect action can be minimised if responsibilities are clearly understood in advance.

One such area of conflict in disaster operations results from the role of bureaucracy in disaster management which is criticised for being too cautious, passive or divorced from the urgency of disaster situations which often require quick decisions in the field. A happy medium between adequate control and unrestrained action is needed.

h.   A number of other aspects of human behaviour in disaster were omitted from the workshop discussion, or received limited attention, or cannot be dealt with here because of space. Problems of registration and failure to register, evacuation and temporary accommodation, warning problems, the administration of relief funds and goods, the difficulties of those who have escaped the impact of the disaster in appreciating the difficulties of those which have suffered, appropriate work schedules for relief workers to permit essential rest periods are but some of these aspects. In several of these areas there is a need for considerably more research. Longer term political, economic or social implications of reconstruction were not examined.

iii. Research

Many of the workshop papers were either preliminary or
provisional reports of field investigations, qualitative and
generalised in their findings or narrow in their scope, so that
it is difficult to derive general principles from them. In one
of the areas to which the workshop gave considerable attention it
was stated that, "Psychological investigations tend to be
relatively datadriven rather than theory-driven" (Innes and
Clark). Considerably more research is required before basic
concepts can be formulated and validated. Some of this research,
however, must still aim at adding to the body of comparative
data. A data bank of appropriate questions for particular
disaster surveys would be a valuable aid.

The greatest need is to co-ordinate the range of research being
undertaken, and in the process, to reduce the repetition of
research which it is difficult to avoid, unless it is known what
has been done or is in hand.

The workshop participants recognised the value of the Australian
Disaster Research Directory (1983) and strongly supported the
need for its up-dating, in particular in the area of psycho-
social research. A Newsletter was also proposed, to appear about
three times a year, to improve the awareness of work in progress
and to facilitate the collaborative work of disaster researchers
over a wide range of disciplines. The importance of a focus and
a continuity for future disaster-studies was recognised and
support was advanced for an extension of the disaster research
capacity of the Counter Disaster College.

Academics jealously guard their freedom to research in directions
they choose. Kearney raised the question whether the emphasis
should be on data collection and evaluation or on the development
of fundamental concepts. A distinction was also made between
controlled research based on accepted standardised methodologies
and free ranging enquiries based on methodologies chosen for the
particular task. In any case there is need to know where the
main gaps in knowledge and understanding are. "Who is to provide
the guidance on these fundamental research policy decisions?"

Apart from a more concerted follow-up from the aspects raised in
this workshop, there are other ways in which progress could be
achieved. A single research funding body would permit broad
guidance to be given, through the funding policy, on the
selection of appropriate research projects, as well as improving
the support for research. A single body which could stimulate,
advise on and assist disaster research, an idea mooted in the
Canberra Symposium on Natural Hazards in Australia in 1976, could
do much to coordinate the research needed. Many research
investigations require an input from interdisciplinary or multi-
disciplinary teams. Workshops at regular intervals on similar
lines in order to up-date knowledge, report on research achieve-
ments, unify ideas and examine future research directions, would
help to maintain the momentum of interest and activity. They

would assist the presentation of findings in a form that make
them more assimilable
in the improvement of counter-disaster plans and the training of
personnel to implement them.

Conclusion

To achieve the aim of improving counter-disaster organisation,
education and training, the result of research must be translated
into a form that it can be applied to these activities. Grear
provided a useful list of matters of practical relevance on which
further research would be productive. Perhaps no more is needed
than to emphasize this responsibility of researchers. Those who
research on disasters and particularly on human behaviour in
disaster generally hope to see the results of their studies being
not only academic but also of practical value. Those whose
research interests lie in the study of human behaviour in
disasters should, in addition to maintaining their own special
areas of concern, think about the over-all aspects of the subject
and consider the gaps that still remain to be filled and the
integration of the whole body of knowledge.

References

Australian Counter   Australian Disaster Research Directory.
Disaster College, 1984   Provisional - 1983

Michaelis, A R., 1984   Editorial : Interdisciplinary Disaster
                          Research.

                          Interdisciplinary Science Reviews,
                          9, No 3, 193 - 195.